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# MAP-DRAWING.

HOW, WHEN, AND WHY IT SHOULD BE TAUGHT.

BY JEROME ALLEN, A. M.,

AUTHOR OF MAP-DRAWING SYSTEM.

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*"That method of instruction which leads the pupil to investigate for himself is by far the best, since, not content with serving up a few dry and lifeless truths, it leads to the stock on which they grow."*—PESTALOZZI.

*"Map-drawing from memory should be practiced from the beginning. It should be remembered that teaching maps is not teaching geography; but the aim should be to teach geography through map-drawing."*—SUPT. PHILBRICK, BOSTON.

*"Much time is saved, the labor of the teacher greatly reduced, and more geography taught in the same time with map-drawing than without it."*

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# MAP-DRAWING.

## WHY, WHEN, AND HOW IT SHOULD BE TAUGHT.

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MAP-DRAWING is becoming more generally taught than formerly, and yet there are many schools in which maps are never drawn as a means of learning geographical truth. Many teachers say that *they have no time, or have not the ability to do the work themselves*. This is true in many cases, but we propose to answer these and other objections in this circular.

### MAP-DRAWING SAVES TIME.

It is certain that much time now spent in learning local geography is lost because pupils do not gain a distinct mental view of the world on which they live. This can, to a good degree, be remedied by map-drawing, and a much more permanent impression made, and thus much time now spent in reciting names can be saved.

All of the leading and most experienced teachers in our country are most decidedly in favor of map-drawing, not for the purpose of showing the artistic skill of pupils, but because by it accurate geographical knowledge is promoted and time saved.

At least *one-half* the time now spent in studying geography can be saved and much more accomplished. In order to permanently remember the location of a place, its name must be associated with its position on our earth. This can be much more easily accomplished by the aid of map-drawing than by any other means. A teacher of large experience recently remarked that, in his opinion, "by means of map-drawing *twice as much* could be learned in the same time with *five times* the probability of its being remembered."

### HOW TO CONDUCT A RECITATION.

Suppose the map of the State of New York is to be recited. The pupils are expected to know the principal characteristics of its local geography. Its *Mountains, Islands, Bays and Sounds, Straits, Rivers, Lakes, Falls, Cities and Towns, Railroads and Canals* are to be recited in such a manner as to give the best evidence that each pupil knows their exact location. By the usual method



of proceeding, each pupil recites orally, with no delineation on the board, slate, or paper.

There is no certainty that all the pupils have obtained the entire lesson, as no one can recite the whole of it, and it consumes much time. Many names are learned, but accurate geographical knowledge has not been promoted.

### A BETTER WAY.

Let each pupil, either at the board or on slate or paper, draw an outline map of the State. It need not take over two minutes.

In one minute the *rivers* are sketched ; in another the *lakes* drawn ; then the principal *towns* are located by a small o, the *canals* and *railroads* indicated by appropriate marks. The whole work need not take over five minutes with a class of average ability.

The next work will be to number the mountains thus :

- |               |               |                |
|---------------|---------------|----------------|
| 1. Adirondac. | 3. Highlands. | 5. Round Top.  |
| 2. Mt. Marcy. | 4. Catskill.  | 6. Shawangunk. |

Then, on the *side* of the map, let their names be written, corresponding to the numbers, as above.

In the same manner the *islands* are numbered, and their names written, and then the *bays* and *sounds*, etc., until all the local features of the State are indicated. The work can now be easily examined, as in an exercise in written spelling.

This work here mentioned need not take over fifteen minutes. *Every member has recited*, and in such a manner as to give the *very best evidence* of his knowledge or want of knowledge of the geography of New York.

If there is time after this work is inspected, and either commended or corrected, then the usual oral recitation can proceed by requiring the pupil reciting to point to the *Mountains* on the outline drawn, while he is telling in what part of the State they are, and in what direction the ranges extend ; or the *Islands*, where they are, by what waters surrounded, and so on until the map has been recited.

No names are to be written on the face of the map drawn. In a short time pupils will obtain great skill in doing this work, and teachers will find it pleasant, expeditious, easy and thorough. It requires very little talking, and the results are always satisfactory. But it supposes that pupils must learn to draw maps easily and rapidly, and we propose to show how this can be done.

### MAP-DRAWING SHOULD BE SYSTEMATIC.

If one State or Continent is drawn on a definite plan, the same course should be pursued with all. States should be so drawn as to be joined to other States, and Continents to other Continents. This is not possible by some methods of drawing before the public. Vermont is drawn on one scale, and Massachusetts on another, while Connecticut is drawn on still another, and New York on quite another ; so that it is impossible to join all of these neighboring States in studying their common physical features.



## THE METHOD BY DIFFERENT UNITS OF MEASURE IS IMPRACTICABLE.

States cannot be united with States. The parts cannot be united to form a whole, nor can the whole be analyzed in studying the parts. It violates the very first principles of the Pestalozzian system of education, and is unworthy the name "*system*."

### REMARKS OF THE HON. J. A. PLACE, OF OSWEGO, N. Y.

In the *Advertiser and Times* of June 20th, Mr. P. remarks

"One great fault of Guyot's system of map-drawing now in use in this city, as taught in our Normal School, is the absurdity of having different scales for different States, which leaves the pupils with no correct idea of their relative size. For instance, by the Guyot system, suppose Connecticut to be drawn by one scale, and Kansas by another; the child might be left with the idea, from their appearance upon the black-board, that Connecticut is nearly as large as Kansas, whereas Kansas is nearly as large as all New England. It would be difficult to eradicate this erroneous idea from the mind of the child. With Prof. Allen's system, each State and country being drawn by the same scale, no such erroneous idea of relative sizes is possible.

Again, by Guyot's system, different scales being made for different States, after all the States have been drawn, it is not possible to put them together and make a perfect whole. They cannot be made to 'fadge.' The various 'United' States, thus drawn and placed together, would form a very distorted 'Union.' By Prof. Allen's method the States or countries of a continent may be drawn separately, and when placed together they form a perfect whole."

### PRINCIPLES UNDERLYING THE SUBJECT.

1. Maps should be drawn in accordance with a definite unit of measurement.
2. Actual distance should be learned.
3. States should be studied in groups, and should be so drawn as to be united as the lessons advance, and thus form entire sections.

### ELEMENTARY LESSONS.

The first lesson should consist in drawing lines of different lengths, first by the aid of a scale, and then by the eye alone, testing the correctness of the work done, by the scale.



1st. Draw a line of the length of this by the aid of a measure, and then by the eye alone. When the line is drawn without a scale, first mark its extreme length by means of dots, and test the correctness of the measurement by the use of the scale.

Continue this exercise until pupils can readily draw a line of this length both with and without a measure.

2d. Divide this line thus:





3d. Draw lines as below, corresponding to the divisions of this scale:

$\frac{1}{8}$		= 25 miles.
$\frac{1}{4}$		= 50 miles.
$\frac{1}{3}$		= 67 miles.
$\frac{1}{2}$		= 100 miles.
$\frac{2}{3}$		= 133 miles.
$\frac{3}{4}$		= 150 miles.
$\frac{7}{8}$		= 175 miles.
1		= 200 miles.

Let these exercises be continued until pupils can readily draw these lines and tell how many miles they represent.

There is no serious objection against the use of the scale. Of course, it indicates much higher skill if a pupil can draw lines of proportionate lengths without one; but as this, to a great degree, is a gift of nature, it ought not to be considered as detracting from the merit of a map because it was drawn by means of a measure.

#### DRAWING LINES ON THE BOARD.

Let a line be drawn *one foot long* on the board. This will represent *one measure* or two hundred miles. Then,

Six inches will represent	. . .	100 miles
Three inches will represent	. . .	50 "
One inch and one-half will represent	. . .	25 "
Four inches will represent	. . .	67 "
Eight inches will represent	. . .	133 "

These lines can easily be drawn and the proportionate measurements represented.

#### DRAWING STATES.

Let Kansas be drawn first, as below.

It will be seen that it is *two* measures long, *one* measure broad, and its northern boundary line *one-eighth* or twenty-five miles shorter than its southern.

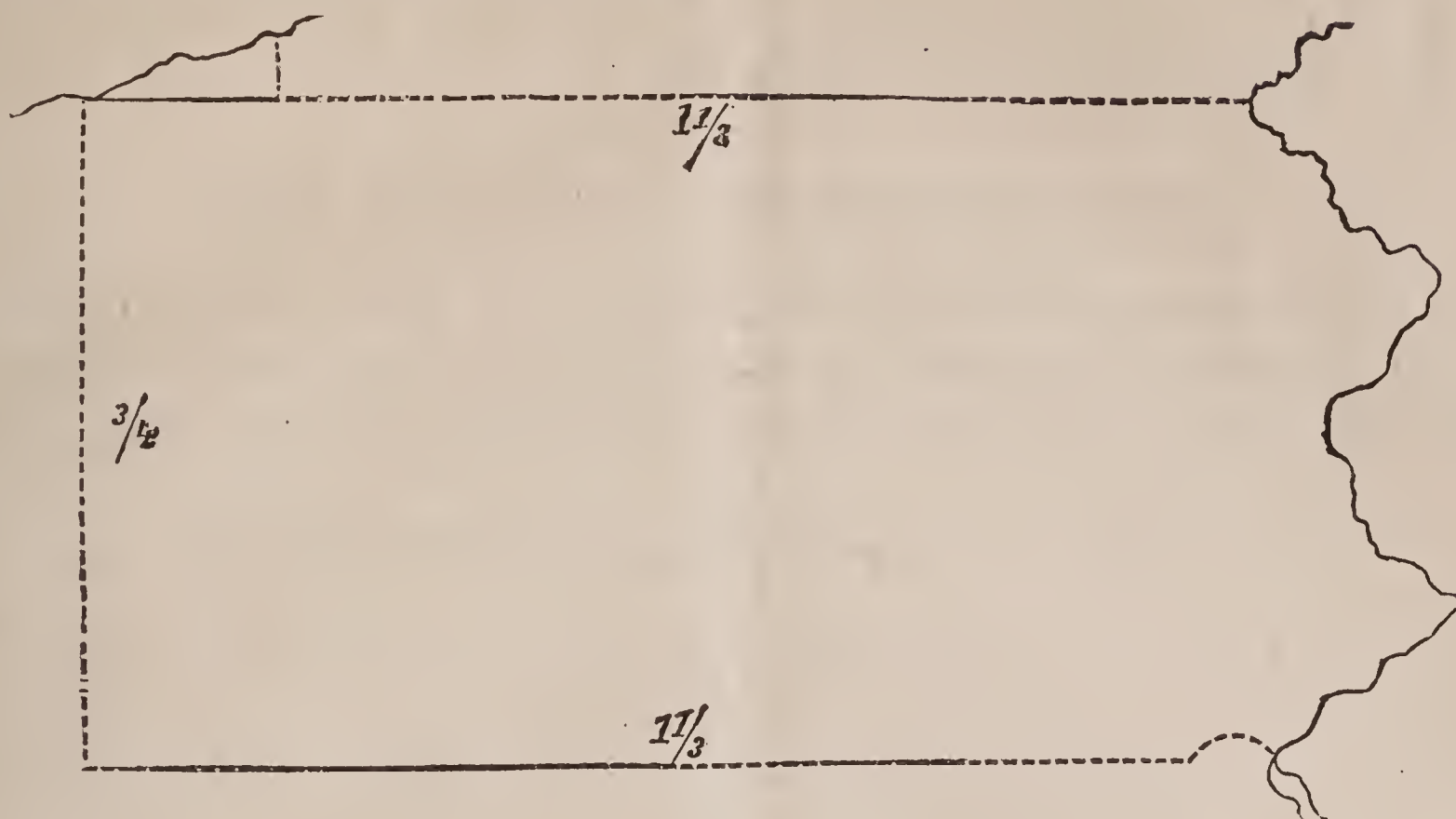
#### KANSAS.

This State is 2 Measures, or 400 miles, long  
from east to west, and 1 Measure, or 200 miles,  
broad from north to south.



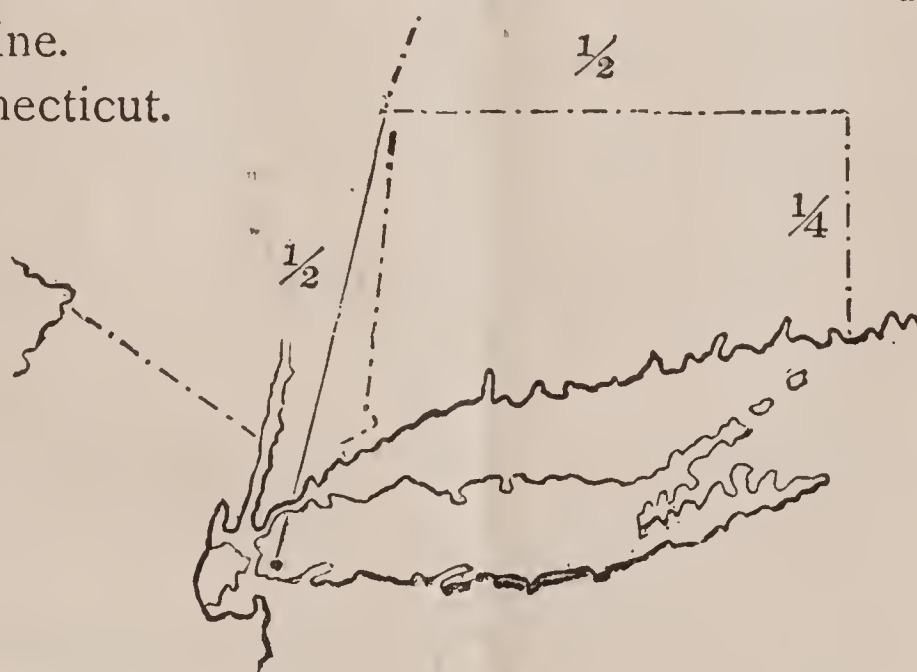
Draw first the *southern* boundary line, then the *western*, then the *northern*, then the *Missouri River*, and then the *eastern*.

Pupils can next draw Pennsylvania.



Make the *northern* boundary line first *one and one-third* measures long, from the N. E. to its N. W. corner on Lake Erie. Leave a portion of the western extremity of this northern boundary line, a little more than *one-fourth*, undrawn, and draw a part of the shore of Lake Erie, as in the figure. Next draw its western boundary line.

Next draw Connecticut.



Its northern boundary line from the S. W. corner of Massachusetts to Rhode Island is *one-half*. Its eastern boundary is *one-fourth*. From the S. W. corner of Massachusetts to Brooklyn, a little west of south, is *one-half*.

By means of these measurements, Connecticut, with the western extremity of Long Island and New York City, can be easily drawn.

#### ALL STATES ARE DRAWN ON THE SAME SCALE.

It will be seen that the States Kansas, Pennsylvania and Connecticut are all drawn on the same scale. Their areas can easily be compared and their relative sizes fixed in the mind.

#### SMALLER STATES DRAWN WITHIN LARGER ONES.

In accordance with this system, Connecticut can be drawn *within* Kansas, and their areas compared. In the same manner, all of the smaller States can be



drawn within the larger ones, and thus not only the United States compared with each other, but these can again be compared with the countries of Europe. This is the only system of map-drawing rendering this work possible. It is certainly very important, for it fixes in the minds of children in an easy way the comparative sizes of the countries of the world.

### ONLY ACTUAL DISTANCES ARE USED.

In other systems a line of "*convenient length*" is taken, without regard to distance in either degree or miles. It is much better to take *actual* distances than *suppositional* ones. It is much better to teach what is *true* than what is *false*.

### ASSOCIATION OF SIMILAR DISTANCES.

In accordance with this system, it is comparatively easy to remember the lengths and breadths of States. Similar distances can easily be associated, and thus fixed in the mind. Such a uniformity exists between the distances of the boundary lines of the United States and the countries of Europe that, by associating their lengths and breadths, no difficulty need be experienced in remembering how long and broad they are.

Let us refer to a few:

The length of Illinois is the same as Minnesota.

The breadth of Iowa is the same as the breadth of Kansas and Illinois.

The length of the northern boundary of Iowa is the same as the breadth and southern boundary of Missouri.

From the southwestern corner of Massachusetts *one hundred miles* reaches respectively to Brooklyn, Pennsylvania, Rhode Island, and the head of Lake Champlain

It is only a little further from the northeastern corner of the State of New York to Eastport, Maine, than to Brooklyn, or from that point to Eastport, Maine, is the same distance as to Sandy Hook.

These are only a few of the many coincidences found in the United States. They are so numerous that it is easy to take actual distances and reduce them all to the same scale.

### OBJECTION ANSWERED.

"*They cannot be remembered.*" "*It would do no good if they could be learned.*"

To these objections we answer: *Something* must be learned, either degrees, "lines of convenient length," or miles. We think that it is plain that *actual distance in miles* is much the most simple.

### LESS IS REQUIRED TO BE LEARNED THAN IN ANY OTHER SYSTEM BEFORE THE PUBLIC.

What is learned is of some immediate benefit in giving definite ideas of comparative size and actual distance from point to point. It must be admitted that this is a great benefit to pupils studying geography. It gives the power of



grouping the States, and thus studying a whole section at the same time. This is impossible in systems not using a single unit of measure.

### WHAT IS NEEDED.

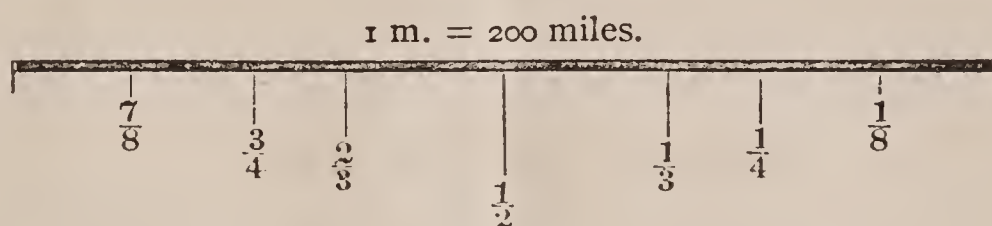
#### THE MAP-DRAWING BOOK.

A book containing measurements has been published, so that by simply looking at the figures placed on the boundary lines, the pupil can at once tell how long to draw the measurement. Thus, when (1) is placed on a line, it always means *one measure* or *two hundred miles*; ( $\frac{1}{2}$ ), *one hundred*; ( $\frac{1}{4}$ ), *fifty*; ( $\frac{1}{8}$ ), *twenty-five*; ( $\frac{3}{8}$ ), *seventy-five miles*, and so through all the States.

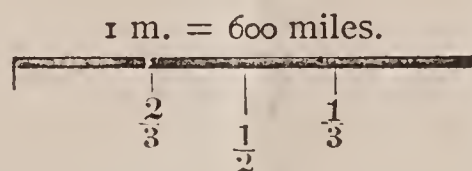
*This book should be placed in the hands of each pupil.*

### THE SCALE.

This is a foot measure, and can be used both at the board and desk. When used at the board, its entire length represents *two hundred miles*. When used at the desk, measurements are prepared on one side of convenient length, divided thus



for the purpose of drawing the States. The other divided thus:



for the purpose of drawing the continents. These two measurements are placed on one side—one on one edge, and the other on the other edge, while the inch measurements are placed on the other side.

*The scale should be placed in the hands of each pupil.*

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FROM SUPERINTENDENT HENRY KIDDLE.

DEPARTMENT OF PUBLIC INSTRUCTION, SUPERINTENDENT'S OFFICE,  
146 Grand St., New York, April 1, 1869.

I have examined, with very great interest, Prof. Allen's System for Teaching Map-Drawing, and think it most admirably adapted to carry out effectually the object designed, while, as a method of teaching the boundaries and comparative



size of different countries, and the relative distance of places, it is far superior in every respect to any other that has been brought to my attention.

HENRY KIDDLE.

THOS. F. HARRISON, ASSISTANT SUPERINTENDENT OF NEW YORK CITY SCHOOLS.

SATURDAY NORMAL SCHOOL,  
*New York, May 10, 1869.*

Prof. Allen's System of Map-Drawing meets my hearty approval. It leaves in the pupil's mind permanent and definite ideas as to the form, situation, and relative dimensions of countries, and cultivates the habit of self-reliance. As an auxiliary to teaching geography, it is a valuable acquisition.

THOS. F. HARRISON.

### IT HAS BEEN TESTED IN THE CITY SCHOOLS.

At the request of Miss Mathews, Principal of Grammar School No. 50, 20th Street, Prof. Allen conducted several exercises with marked success. The influence on her school was very great.

### MISS MATHEWS' LETTER.

125 E. 27TH STREET, *April 23, 1870.*

MR. ALLEN.

DEAR SIR: It affords me much pleasure to state to you that the results of your instruction in map-drawing, which you recently gave in my school, have proved entirely satisfactory. The fact that in eight lessons pupils can be taught to draw with neatness and accuracy nearly half the States in the Union, in an average time of two or three minutes each, must commend your system to very favorable consideration.

Moreover, the system is so simple and definite that no teacher of ordinary intelligence can fail to apply it with satisfactory results, while the clearness with which it imparts to the pupils a knowledge of the relative size of countries, with their configurations and boundaries, makes it truly admirable. The interest and enthusiasm manifested by the pupils in this work tend to make the impressions received not only clear, but permanent.

I sincerely trust that you will be successful in introducing your system of map-drawing into general use in the schools.

Very truly yours,

LETITIA MATHEWS,  
*Principal Grammar School No. 50.*

Prof. Allen, author of this system, will be in New York City at the commencement of the Fall Term of 1870, and will be glad to correspond with any Principals with regard to his system of promoting *rapid map-drawing* in their schools. Address No. 3 E. 33d Street.



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At a meeting of the Association of Normal School Teachers of the State of New York, held in Oswego, July 7 and 8, Allen's System of Map-Drawing was unanimously recommended to be used in the State Normal Schools.

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- V. It uses a single unit of measure for the Continents.
- VI. It fixes ideas of comparative size in the mind.
- VII. It makes the page to suit the map.
- VIII. It uses lines of *exact* length.
- IX. It gives the ability of rapid execution.
- X. Similar distances can be associated and thus easily remembered.

## UNSCIENTIFIC MAP-DRAWING.

- I. Unscientific map-drawing teaches the pupil to draw in such a manner that the States *cannot* be united so as to be studied as a whole.
- II. It *does* encumber the mind with a mass of unprofitable and ungeographical detail.
- III. It teaches no distance in miles, degrees or minutes.
- IV. It uses as many units of measure as there are States drawn.
- V. It uses as many units of measure as there are Continents drawn.
- VI. It gives very confused and erroneous ideas of size and distance.
- VII. It makes the map to suit the page.
- VIII. It uses lines of "*convenient*" length.
- IX. It gives no ability to draw maps rapidly.
- X. It is soon forgotten, because similar distances cannot be associated.

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